man have, heretofore, been found. These terraces along the Ohio regularly alternate from one side to the other. At Beaver, Pa., the terrace is 125 feet above the river. The height, however, diminishes gradually as we get farther away from the glacial boundary and the supply of material contributed by streams coming from the glaciated area. The terrace at Brilliant rises sixty-eight feet above the river, and extends southward for a distance of two miles, being more than a quarter of a mile wide for a considerable portion of the way. The implement was found near the lower end of this section of the terrace, and about half way between Riddle's Run and Salt Run coming in from the west. To any one who inspects the locality it will be seen to be impossible to separate the gravel strata in which this implement was found from the glacial deposit which is here so plain and so characteristic of the region.

On being carefully examined by Professor Putnam he remarked that the implement was a knife of very early type, and that under the glass it was clearly seen to be coated with the patina which indicates that it is a relic of great antiquity, and has lain for a long time in some such conditions as that described by Mr. Huston. Professor Putnam regarded it as a very important discovery.

Mr. F. H. Cushing, Vice-President of the Anthropological Section said that we have in this case an implement concerning which there can be no doubt that it was completely finished and is not a "reject." It had been carefully chipped to an edge all round; and not only so, but it had been used and sharpened; and what was still more significant it had been sharpened by the older, and not by the later processes, the edge had been chipped in sharpening not by pressing against it with a bone but by blows with another stone. Mr. Cushing also remarked with Professor Putnam upon the antiquity of the type. While continuing in use through later times on account of its convenience, it is without doubt one of the earliest types of implement and everything about it agrees perfectly with the conditions of its alleged discovery.

GEORGE FREDERICK WRIGHT.

PROCEEDINGS OF SCIENTIFIC SOCIETIES.

The American Microscopical Society held its Eighteenth Annual Meeting at Ithaca, N. Y., Aug. 21–23, 1895. The following were the proceedings: Address of welcome, by the Hon. D. F. Van Vleet; response by the President of the Society, Professor S. H. Gage.

The following papers were read and discussed during the sessions: Some Notes on Alleged Meteoric Dust, Magnus Pflaum, Pittsburg, Pa.; Corky Outgrowth of Roots and their Connection with Respiration, H. Schrenk, Cambridge, Mass.; A Practical Method of Referring Units of Length to the Wave Length of Sodium Light, Professor Wm. A. Rogers, Waterville, Me.; Some Peculiarities in the Structure of the Mouth Parts and Ovipositor of *Cicada septendecim*, Professor J. D. Hyatt, New Rochelle, N. Y.; The Lateral Line Systems of Sense Organs in Amphibia, Dr. B. F. Kingsbury, Defiance, O.; The Chlorophyll Bodies of *Chara coronata*, Professor W. W. Rowlee, Ithaca, N. Y.; Secondary Thickenings of the Rootstalks of Spathyema, Mary A. Nichols, Ithaca, N. Y.; Comparison of the Fleischel, the Gower and the Specific Gravity Method of Determining the Percentage of Hæmoglobin in Blood for Clinical Purposes, F. C. Busch and A. T. Kerr, Jr., Buffalo, N. Y.; The History of the Sex-Cells from the time of Segregation to Sexual Differentation in *Cymtogaster*, Professor C. H. Eigenmann, Bloomington, Ind.; A Fourth Study of the Blood, Showing the Relation of the Colorless Corpuscle to the Strength of the Constitution, Dr. M. L. Holbrook, New York City; Two Cases of Intercellular Spaces in Vegetable Embryos, K. M. Wiegand, Ithaca, N. Y.; The Fruits of the Order Umbelliferæ, Dr. E. J. Durand, Ithaca, N. Y.; The Action of Strong Currents of Electricity upon Nervous Tissue; Dr. P. A. Fish, Ithaca, N. Y.; The Morphology of the Brain of the Soft-Shelled Turtle and the English Sparrow Compared, Susanna P. Gage, Ithaca, N. Y.; The Flagella of Motile Bacteria, Dr. V. A. Moore, Washington, D. C.; The Primitive Source of Food Supply in the Great Lakes; Some Experiments in Methods of Plankton Measurements, Professor Henry B. Ward, Lincoln, Neb.; The Fruits of the Order Compositæ, Professor W. W. Rowlee and K. M. Wiegand, Ithaca, N. Y.; The Spermatheca and Methods of Fertilization in some American Newts and Salamanders, Dr. B. F. Kingsbury, Defiance, O.; Cocaine in the Study of Pond-life; Paraffin and Collodion Embedding, Professor H. S. Conser, Sunbury, Pa.; Formalin as a Hardening Agent for Nerve Tissue, Dr. Wm. C. Krauss, Buffalo, N. Y.; The Use of Formalin in Neurology, Dr. P. A. Fish, Ithaca, N. Y.; The Lymphatics and the Lymph Circulation, with Demonstration of Specimens and Apparatus, Dr. Grant S. Hopkins, Ithaca, N. Y.; New Points in Photo-micrographs and Cameras, W. H. Walmsley, Chicago, Ill.; The Question of Correct Naming and Use of Micro-reagents, Miss V. A. Latham, M. D., Chicago, Ill.; A New Way of Marking Objectives, Dr. Wm. C. Krauss, Buffalo, N. Y.; Demonstration of Histological Prepar-

ations by the Projection Microscope, Drs. Krauss and Mallonee, Buffalo, N. Y.; Improvements in the Collodion Method, Professor S. H. Gage, Ithaca, N. Y.; The Syracuse Solid Watch-Glass; A Metal Centering Block; A New Method of Making Cells and of Mounting in Glycerine, Dr. A. C. Mercer, Syracuse, N. Y.

The afternoon of Wednesday was devoted to an inspection of the Library and other University buildings. Illustrations of methods of marking micrometers upon a ruling engine were shown at Franklin Hall (Physical Building).

In the evening, President Gage gave his address: The Processes of Life Revealed by the Microscope—a Plea for Physiological Histology.

Thursday afternoon and evening were spent in an excursion on Cayuga Lake.

Friday afternoon was the business meeting of the Society, and in the evening there was an exhibition of microscopical objects, especially designed to give people who have not had the opportunity of making extended study with a magnifying glass, the privilege of seeing for themselves some of the interesting and instructive revelations of the microscope.

The Society appropriated $25.00 in support of Dr. Field's Bibliographical Bureau, and voted to send their proceedings regularly to it.

The forty-fourth meeting of the American Association for the Advancement of Science met in Springfield, Mass., from August 28th to September 4th inclusive. The officers of the meeting were:

President, E. W. Morley, Cleveland, Ohio; Vice-Presidents, A. Mathematics and Astronomy, Edgar Frisby, Washington, D. C.; B. Physics, W. LeConte Stevens, Troy, N. Y.; C. Chemistry, William McMutrie, Brooklyn, N. Y.; D. Mechanical Science and Engineering, William Kent, Passaic, N. J.; E. Geology and Geography, Jed. Hotchkiss, Staunton, Va.; F. Zoölogy, Leland O. Howard, Washington, D. C.; G. Botany, J. C. Arthur, Lafayette, Ind.; H. Anthropology, F. H. Cushing, Washington, D. C.; I. Economic Science and Statistics, B. E. Fernow, Washington, D. C.; Permanent Secretary, F. W. Putnam, Cambridge, Mass; General Secretary, Jas. Lewis Howe, Lexington, Va.; Secretary of the Council, Charles R. Barnes, Madison, Wis.; Secretaries of the Sections, A. Mathematics and Astronomy, Asaph Hall, Jr., Ann Arbor, Mich.; B. Physics, E. Merritt, Ithaca, N. Y.; C. Chemistry, W. P. Mason, Troy, N. Y.; D. Mechanical Science and Engineering, H. S. Jacoby, Ithaca, N. Y.; E. Geology and Geography, J. Perrin

Smith, Palo Alto, Cal.; F. Zoölogy, C. W. Hargett, Syracuse, N. Y.; G. Botany, B. T. Galloway, Washington, D. C.; H. Anthropology, Stewart Culin, Philadelphia, Pa.; I. Economic Science and Statistics, W. R. Lazenby, Columbus, Ohio; Treasurer, R. S. Woodward, New York, N. Y.

The papers which were read in Sections E, F, G and H, which include the natural sciences as usually defined, were the following:

FRIDAY, AUG., 30TH. *Section E, Geology.* The Relations of Primary and Secondary Structures in Rocks, by C. R. Van Hise; The Archæan and Cambrian Rocks of the Green Mountain Range in Southern Massachusetts, by B. K. Emerson; Gotham's Cave, or Fractured Rocks in Northern Vermont, by C. H. Hitchcock; Recent Discovery of the Occurrence of Marine Cretaceous Strata on Long Island, by Arthur Hollick; Geological Canals between the Atlantic and Pacific Oceans, by J. W. Spencer; Geological Notes on the Isles of Shoals, by H. C. Hovey; Great Falls of the Mohawk at Cohoes, N. Y., by W. H. C. Pynchon; Subdivision of the Upper Silurian in Northeast Iowa, by Andrew G. Wilson; Supplementary Notes on the Metamorphic Series of the Shasta Region of California, by J. P. Smith; Recent Elevation of New England, by J. W. Spencer.

Section F. The Evolution of the Insect Mouthpiece, by J. B. Smith (Lantern Illustrations); The Mouthpiece of Insects with Special Reference to the Diptera and Hemiptera, by C. L. Marlatt; On the Olfactory Lobes, by Charles S. Minot; Notes on Fleas, Mosquitoes and the Horse-flies, by L. O. Howard; On the Visceral Anatomy of the Lacertilia, by E. D. Cope; Characters which are useful in raising larvae of Sphingidae, by George Dimmock.

Section G. A Leaf Rot of Cabbage, by H. L. Russell; The Southern Tomato Blight, by Erwin F. Smith; Observations on the Development of Uncinula spiralis, by B. T. Galloway; The effect of sudden changes of turgor and of temperature on Growth, by Rodney H. True; Recording Apparatus for the Study of Transpiration of Plants, by Albert F. Woods; Pressure, Normal Work and Surplus Energy in Growing Plants, by George M. Holferty; Notes on the Ninth Edition of the London Catalogue of British Plants, by N. L. Britton; Obolaria virginica L. A Morphological and Anatomical Study, by Theodore Holm; Botany of Yakutat Bay, Alaska, by Frederick V. Coville.

Section H. The Dynasty of the Arrow, by Frank Hamilton Cushing; The Origin of Playing Cards, by Stewart Culin; The Origin of Money in China, by Stewart Culin; Mustach Sticks of the Ainus, by Stewart Culin; Some Arabic Survivals in the Lauguage and Folk-

usage of the Rio Grande Valley, by John G. Bourke; The Sacred Pole of the Omaha Tribe, by Alice C. Fletcher; The mystery of the name Pamunkey, by William Wallace Tooker; A Vigil of the Gods, by Washington Matthews.

MONDAY, SEPT. 25TH. *Section E.* Views of the Ice Age as two epochs, the Glacial and Champlain, by Warren Upham; Glacial Phenomena between Lake Champlain and Lake George and the Hudson, by G. F. Wright; Whirpool of Niagara, by G. W. Holley; Distribution of Sharks in the Cretaceous, by C. R. Eastman; Terminology proposed for the description of Pelecypoda, by A. Hyatt; The Equatorial Counter Currents, by W. M. Davis; Address by Maj. Jed Hotchkiss, the Vice-President of Section E, at 2 o'clock.

Section F. Stemmiiulus as an Ordinal Type, by O. F. Cook; Characters which are useful in raising larvae of Sphingidae, by George Dimmock; The Affinities of the Pythonomorph Reptiles, by E. D. Cope; Temperature Variations of cattle observed during extended periods of time, with reference to the Tuberculosis Test, by Julius Nelson.

Sections F and G. Variation after Birth, by L. H. Bailey; Rejuvenation and Heredity, by Charles S. Minot; The Distinction between Animals and Plants, by J. C. Arthur; Fungous Gardens in the nests of an Ant (Atta tardigrada Buckl.) near Washington, by Walter T. Swingle; Poisoning by Broad-leaved Laurel, Kalmia latifolla, by Frederick V. Colville; The Physiology of Isopyum biternatrum L., by D. T. McDougal; The Transmission of Stimuli-effects in Mimosa pudica L., by D. T. McDougal; Personal Nomenclature in the Myxomycetes, by O. F. Cook; A New Californian Liverwort, by Douglas H. Campbell; The number of spare Mother Cells in the Sporangia of Ferns, by Willis L. Jepson; The Constancy of the Bacterial Flora of Sour Milk, by H. L. Bolley; The Watermelon Wilt and other Wilt Diseases due to Fusarium, by Erwin F. Smith.

Section H. The year of Pleiides of Prehistoric Starlore, by R. G. Haliburton; An Iroquois Condolence, by W. M. Beauchamp; Mental Measurement in Anthropology, by J. McKeen Cattell; Some Symbolic Carvings from the Ancient Mounds of Ohio, by F. W. Putnam and C. C. Willoughby; Account of the Discovery of a chipped chert implement in undisturbed Glacial Gravel near Steubenville, O., by F. G. Wright; Notes on the Bushmen of Transvaal, by George Leith; presented by F. W. Putnam; Village Life among the Cliff Dwellers, by Stephen D. Peet; An Ojibwa Transformation Tale, by Harlan I. Smith; Old Mohawk Words, by W. H. Beauchamp; The Different

Races described by early Discoverers and Explorers, by Stephen D. Peet; Root Fungus of Maize, by George Macloskie; Enantiomorphism in Plants, by George Macloskie.

TUESDAY, SEPT. 3RD. *Section E.* Interesting Features in the Surface Geology of the Genesee Region, illustrated with lantern slides, by H. L. Fairchild; Japan, Gardner G. Hubbard; Great Falls of the Mohawk at Cohoes, N. Y.; illustrated with lantern slides, by W. H. C. Pynchon. In the afternoon the Section met with Section H.

Section F. On the Girdling of Elm Twigs by the Larvæ of *Orgygia leucostigma*, and its Results, by J. A. Lintner; Notes upon the Eupaguridæ, by Charles W. Hargitt; On a Revision of the North American Craspedosomatidæ, by O. F. Cook; A New Character in the Colobognatha, with Drawings of Siphonotus, by O. F. Cook; A New Wheel for Color Mixing in Tests for Color Vision, by J. H. Pillsbury; Some Further Results of Investigation of Areas of Color Vision in the Human Retina, by J. H. Pillsbury; A Study of Panorpa and Bittacus, by E. P. Felt.

WEDNESDAY, SEPT. 4TH. *Section H.* A Study in Anthropo-geography as a Branch of Sociological Investigation, by William Z. Ripley; The Algonquian Appellatives of the Siouan Tribes of Virginia, by W. M. Wallace Tooker; Indian Songs and Music, by Alice C. Fletcher; The Spider Goddess and the Demon Snare, by F. H. Cushing; The Influence of Prehistoric Pigmy Races on Early Calendars and Cults, with Notes on Dwarf Survivals by R. G. Haliburton; Account of the Discovery of a Chipped Chert Implement in Undisturbed Glacial Gravel near Steubenville, Ohio, by G. F. Wright; Palæothic Culture, its Characteristic Variations and Tokens, by Stephen D. Peet; A Melange of Micmac Notes, by Stansbury Hager; Grammatic Form and the Verb Concept in Iroquoian Speech, by J. W. B. Hewitt; Anthropometrical, Psychoneural and Hypnotic Measurements, by Arthur Mac Donald; The Education of Blind-deaf Mutes, by John Dutton Wright; A Study in Child Life, by L. O. Talbot; The Indians of Southern California, by Franz Boas; The Cosmogonic Gods of the Iroquois, by J. W. B. Hewitt; Word Formation in the Kootenay Language, by Alex. F. Chamberlain; Kootenay Indian Personal Names, by Alex. F. Chamberlain.

The following officers were elected for the coming year:

President—Edward D. Cope, of Philadelphia; *Vice-Presidents*—A—Mathematics and Astronomy, William E. Story, of Worcester; B—Physics, Carl Leo Mees, of Terre Haute, Ind.; C—Chemistry, W. A. Noyes, of Terre Haute, Ind.; D—Mechanical Science and Engineering, Frank O. Marvin, of Lawrence, Kansas; E—Geology and Geography,

Benjamin K. Emerson, of Amherst; F—Zoology, Theodore N. Gill, of Washington, D. C.; G—Botany, N. L. Britton, of New York City; H—Anthropology, Alice C. Fletcher, of Washington, D. C.; I—Social Science, William R. Lazenby, of Columbus, Ohio; *General Secretary*—Charles R. Barnes, of Madison, Wis.; *Secretary of the Council*—Asaph Hall, Jr., of Ann Arbor, Mich.; *Secretaries of the Sections*—A—Mathematics and Astronomy, Edwin B. Frost, of Hanover, N. H.; B—Physics, Frank P. Whitman, of Cleveland, Ohio; C—Chemistry, Frank P. Venable, of Chapel Hill, N. C.; D—Mechanical Science and Engineering, John Galbraith, of Toronto, Can.; E—Geology and Geography, A. C. Gill, of Ithaca, N. Y.; F—Zoology, D. S. Kellicott, of Columbus, Ohio; G—Botany, George F. Atkinson, of Ithaca, N. Y.; H—Anthropology, John G. Bourke, United States Army; I—Social Science, R. T. Colburn, of Elizabeth, N. J.; *Treasurer*—R. S. Woodward, of New York, N. Y.

The Annual Report of Secretary Putnam showed that 367 members have been in attendance, all parts of the country being well represented. From Springfied there were 15 and from the rest of Massachusetts 56. The other leading States were as follows: New York 90, District of Columbia 39, Pennsylvania 29, Ohio 18, Connecticut 14, Indiana 12. There were 185 new members elected and 58 made fellows. Four have died during the year. There have been three public lectures and 207 papers, divided as follows among the sections: A 16, B 34, C 42 D 6, E 17, F 16, G 28, H 33, I 13.

SCIENTIFIC NEWS.

Dr. Charles Valentine Riley curator of the department of Entomology in the U. S. National Museum died Sept. 15th in consequence of being thrown from a bicycle on the previous day.

The eminent scientist was born in London in 1843 and he attended schools in France and Germany. For six years he studied on the Continent of Europe. Two passions characterized his boyhood—one for collecting insects, the other for drawing and painting.

At the age of 17 he sailed for New York, where, after a seven weeks' voyage, he arrived with little means. He went West and settled upon a farm in Illinois. Here he remained for four years, and acquired an experience of practical agriculture. About the time of his majority he commenced journalistic work in Chicago, where, in connection with his work on the paper, he gave special attention to botany and entomology. In 1868 he accepted the office of State entomologist of Missouri. In the Spring of 1878 he was tendered the position of entomologist to the